
DMS-4675**Cementitious Grouts and Mortars for Miscellaneous Applications***Effective Date: December 2014*

1. DESCRIPTION

This Specification governs the pre-qualification procedure, packaging, and material properties of cementitious grouts and mortars used for miscellaneous applications. These applications include but are not limited to:

- grouting precast member connections,
- grouting anchor bolts and dowels,
- grouting lateral connectors for prestressed beams,
- bearing seat build ups, and
- jointing of concrete pipe and box culverts with mortar.

The grouts and mortars governed by this Specification are not suitable for encapsulating post-tensioning strands. Refer to [DMS-4670](#), "Grouts for Post-Tensioning," for the material requirements for post-tensioning grout material.

2. UNITS OF MEASUREMENTS

The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.

3. MATERIAL PRODUCER LIST

The Materials and Pavements Section of the Construction Division (CST/M&P) maintains the Material Producer List (MPL) of all materials conforming to the requirements of this Specification. Materials appearing on the MPL, entitled "[Cementitious Grouts and Mortars for Miscellaneous Applications](#)," require no further sampling and testing unless deemed necessary by the Project Engineer or CST/M&P.

4. BIDDERS' AND SUPPLIERS' REQUIREMENTS

The Department will only purchase or allow on projects those products listed by producer and product code or designation shown on the MPL.

Use of pre-qualified product does not relieve the Contractor of the responsibility to provide product that meets this Specification. The Department may inspect or test material at any time and reject any material that does not meet the specifications.

5. PRE-QUALIFICATION PROCEDURE

- 5.1. **Pre-Qualification Request.** Submit a request for evaluation under DMS-4675 to DMS_Prequal@txdot.gov.

Include the following information in the request:

- company name;
- physical and mailing addresses;
- contact person, phone number, and email address; and
- material type (grout or mortar).

- 5.2. **Pre-Qualification Sample.** Submit a minimum 100-lb. sample of grout material or 50-lb. sample of mortar material to the Texas Department of Transportation, CST/M&P (CP51), 9500 North Lake Creek Parkway, Austin, TX 78717.

Include the following with the sample:

- test report from an independent laboratory audited and inspected by the Cement Concrete Research Laboratory (CCRL) containing test results and certifying compliance of the material with this Specification;
- manufacturer's certification and lot number for submitted sample;
- manufacturer's certification that the material contains no added chlorides;
- technical data sheets typically accompanying the product with printed instructions for mixing, application, and shelf life;
- current safety data sheet (SDS) that complies with OSHA Hazard Communication Standard 29 CFR 1910.1200; and
- list of all possible package quantities and types of packaging.

Submit all materials for pre-qualification at no cost to the Department.

- 5.3. **Evaluation.** The Department reserves the right to perform any or all of the tests specified as a check on the tests reported by the manufacturer. In the case of any variance, the Department's tests will govern. CST/M&P will notify prospective bidders and suppliers after completion of material evaluation.

- 5.3.1. **Qualification.** If approved for Department use, CST/M&P will add the material to the MPL.

To maintain pre-approved status, submit annual notarized certifications stating that the product has not been altered since it was originally submitted for approval.

Report changes in the composition or in the manufacturing process of any material to CST/M&P. Significant changes reported by the producer, as determined by the Director of CST/M&P, may require a re-evaluation of performance. The Department reserves the right to conduct whatever tests it deems necessary to identify a pre-qualified material and determine if there is a change in the composition, manufacturing process, or quality that may affect its durability or performance. In case of variance, the Department's tests will govern.

- 5.3.2. **Failure.** Producers not qualified under this Specification may not furnish materials for use on Department projects.

Producers failing to qualify may submit a request for re-evaluation after 6 months have elapsed from the date of the original request. CST/M&P may modify this time limit at its discretion. In the request for re-evaluation, document the cause of the issue and corrective action taken.

The Department normally bears the costs of sampling and testing; however, the producer will bear the costs associated with materials failing to conform to the requirements of this Specification. The Director of CST/M&P will assess this cost at the time of testing, and amounts due will be billed to the producer.

- 5.4. **Periodic Evaluation.** The Department reserves the right to randomly sample and evaluate pre-qualified materials for conformance with this Specification and to perform random audits of documentation.

Department representatives may sample material from the manufacturing plant, the project site, and the warehouse.

Failure of materials to comply with the requirements of this Specification as a result of periodic evaluation may be cause for removal of those materials from the MPL. In case of variance, the Department's tests will govern.

5.5. **Disqualification.** Causes for disqualification and removal from the MPL may include, but are not limited to:

- falsification of documentation,
- producer fails to report any change in material composition or manufacturing process to CST/M&P,
- material fails to meet the requirements of this Specification as a result of periodic evaluation, or
- producer has unpaid charges for failing samples.

CST/M&P will remove disqualified producers from the MPL and will not allow submission of material for re-qualification for 6 months, at the discretion of the Department.

5.6. **Re-Qualification.** Once the disqualification period established by CST/M&P has elapsed, producers disqualified and removed from the MPL may begin the re-qualification process by submitting a request in accordance with Section 5.1, including additional documentation identifying the cause of the problem and corrective action taken. The re-qualification process will then follow all subsequent Sections of Article 5.

The Department normally bears the costs of sampling and testing; however, the disqualified producer will bear the costs associated with re-qualification. The Director of CST/M&P will assess this cost at the time of re-evaluation, and amounts due will be billed to the producer.

6. MATERIAL REQUIREMENTS

Products must not contain metallic formulations or chlorides. Additives to pre-packaged materials are not allowed.

The material requirements and test methods listed in Tables 1 and 2 are for laboratory testing only. Field testing may require different tests and/or specimen sizes or geometries.

6.1. **Grouts.** Pre-packaged grouts must conform to ASTM C 1107 and meet the additional material requirements stated in Table 1. Where there is conflict between ASTM C 1107 and the requirements listed in Table 1, the requirements of this Specification govern. Additionally, the Department will only allow extension of a grout mixture with pea gravel if recommended by the manufacturer.

Table 1
Material Requirements of Cementitious Grout

Property	Requirement	Test Method
Fluidity – efflux time from flow cone	20–30 sec.	Tex-437-A, Method 1
Setting time Initial set Final set	2.5–5.0 hr. 4.0–8.0 hr.	ASTM C 191
Volume change	0.0–0.3% expansion at 24 hr. and 28 days	ASTM C 1090 ¹
Coefficient of thermal expansion	3.0–10.0 micro strain/°F	Tex-428-A
Modulus of elasticity	2,800 ksi–5,000 ksi at 28 days	ASTM C 469
Compressive strength (average of 3 cubes), Min	3,000 psi at 16 hr. 3,500 psi at 1 day 4,000 psi at 3 days 5,800 psi at 28 days	Tex-442-A
Freeze/thaw resistance	90% at 300 cycles	ASTM C 666

1. Modified to include verification at only 24 hr. and 28 days.

- 6.2. **Mortars.** Pre-packaged mortars used for reinforced concrete pipe joints and bearing seat build-ups must meet the material requirements stated in Table 2.

Table 2
Material Requirements of Cementitious Mortars

Property	Requirement	Test Method
Mortars for RC Pipe Joints		
Compressive strength (average of 3 cubes), Min	1,800 psi at 28 days	ASTM C 109
Mortars for Bearing Seat Build-Ups		
Compressive strength (average of 3 cubes), Min	3,000 psi at 16 hr.	ASTM C 109
	3,500 psi at 1 day	
	4,500 psi at 28 days	

7. PACKAGING AND LABELING

Prepackage grout or mortar in plastic lined or coated bags. Grout or mortar bags must indicate the brand name, date of manufacture, lot number, and mixing instructions. The grout or mortar supplier must provide the Contractor and Engineer with a copy of the quality control data sheet for each lot number and shipment sent to the jobsite.